STANDARD OPERATING GUIDELINE FOR COMBATING SINGLE FAMILY DWELLING FIRES

EXECUTIVE ANALYSIS OF FIRE SERVICE OPERATIONS IN EMERGENCY MANAGEMENT

BY: Todd S. Hart
Olathe Fire Department
Olathe, KS

An applied research project submitted to the National Fire Academy
as part of the Executive Fire Officer Program

August 1998

Abstract

The Olathe Fire Department does not have a clear standard operating guideline that addresses procedures to be used while combating single family dwelling fires.

The purpose of this project is to create a standard operating guideline that outlines the procedures and equipment to be used at all single family dwelling fires.

The historical and evaluative research methods were utilized to address the following questions.

1. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the safety of the firefighters and occupants involved in the incident?
2. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the efficiency of the primary search?
3. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires reduce the time necessary to find and control the fire?

The data for this project was gathered by performing a literature review and conducting a series of field test studies. These field test studies provided many of the specific answers sought by the researcher.

The study discovered that the answer to the above three questions was "yes", and that the vast majority of Olathe Fire Department members are in favor of having a standard operating guideline that outlines specific responsibilities and equipment to be used while combating single family dwelling fires.

It is therefore recommended that:

1. The Olathe Fire Department adopt a standard operating guideline, similar to the one developed by this researcher, that addresses procedures and equipment to be used while combating fires in single family dwellings.
2. The department conduct training sessions for members of the Olathe City Council based on the new standard operating guideline. The purpose of these training sessions would be to demonstrate the importance of the thermal imaging camera to the firefighters and occupants when fighting a fire in a single family dwelling. These sessions would hopefully justify the funding of these devices.
3. A committee of Olathe Fire Department members be formed to evaluate the various thermal imaging cameras available and make recommendations to the Chief as to what camera to purchase.
4. The department perform quarterly drills with the purpose of continued evaluation of the standard operating procedure (S.O.P.) and the required equipment. This provides an opportunity for additional feedback should changes be considered in the future.
5. Lobby for fire crews of four personnel. The equipment required in the S.O.P. can be utilized much easier with additional personnel.
6. Since this process was so well accepted, consider writing additional S.O.P.' s specific to other types of emergencies that require the fire department's response.

Table of Contents

Introduction

Problem Statement

The Olathe Fire Department does not have a clear standard operating guideline that addresses procedures to be used while combating single family dwelling fires.
A guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires would increase the safety of the firefighters and occupants, increase the efficiency of the primary search, and reduce the time necessary to find and control the fire.

Purpose Statement

The purpose of this project is to create a standard operating guideline that outlines the procedures and equipment to be used at all single family dwelling fires. This study will also include a tactical work sheet developed by this researcher. This tactical work sheet will serve to reinforce the main components of the standard operating guideline.

The historical and evaluative research methods will be the utilized to address the following questions.

1. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the safety of the firefighters and occupants involved in the incident?
2. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the efficiency of a primary search?
3. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires reduce the time necessary to find and control the fire?

Background and Significance

As stated in the introduction section of this paper, the Olathe Fire Department does not have a clear standard operating guideline that addresses procedures to be used while combating single family dwelling fires. The tactics, strategies, and equipment used at single family dwelling fires will vary depending on the individuals that are on-duty when the alarm is received. The first arriving officer on one shift may give a quick size-up and choose to concentrate primarily on fire attack. A different first arriving officer may take command and initially choose to perform search procedures on the floor above the fire. On another shift, the first arriving officer may choose to take command from the exterior and have the second unit assigned to fire attack. Once the first arriving officer has made a decision, the possible actions of the next arriving companies are yet to be determined.

Without a standard operating guideline specific to combating single family dwelling fires, the potential for mistakes and oversights is increased. For instance, the first arriving officer may assign his first two arriving companies to attack the fire and forget other essential items such as search and ventilation until well within the fire.

Currently, even if the first arriving officer assigns his responding companies appropriately and systematically, the firefighters may or may not bring with them the tools necessary to perform the needed jobs. There are also times that the firefighters choose tools that have no use for the function that is required. The thermal imager is one tool that should be used on all single-family dwelling fires during the initial attack and search. The Olathe Fire Department currently has one hand held thermal imaging device; however, this device is rarely used until well after the bulk of the fire has been

extinguished. The thermal imager is then only used to locate hot spots within walls or hidden spaces.

At this particular time, the responding fire companies can only guess what they may be asked to do upon arrival at the fire scene. With a standard operating guideline specific to combating single family dwelling fires, the responding crews will be able to make mental and physical preparations prior to and upon arrival on the scene. This preparation goes a long way in improving efficiency and the overall safety factor for both firefighters and occupants. The firefighters are clear on their expected actions, leaving out much of the guesswork that often accompanies these types of calls. In addition, the occupants will benefit due to the fact that the firefighter guidelines and responsibilities are specific utilizing a predetermined set of tasks and equipment that leave little room for error or oversight.

In the National Fire Academy's course on Executive Analysis of Fire Service Operations in Emergency Management, similar problems to this were discussed. Standard operating guidelines that addressed procedures, responsibilities, and equipment were a focus of both the class and this research paper.

Literature Review

This researcher discovered a variety of published documents that dealt specifically with the research problem addressed in this paper. What others have found and documented proved significant to this research project.

" The time to prepare, plan, and train is before the fire occurs, not when you pull up to the scene" (Eisner, 1993, p 14).

Eisner (1993) states, that each firefighter should be prepared before the receipt of an alarm by knowing what general type of strategy and tactics will be utilized at specific types of occupancies that he or she may normally respond to.

" The single-family dwelling is the most prevalent type of shelter in most communities, and it is the site of most residential fires" (Loeb, 1982, p 30).

Eisner (1992) states, that when members of your department have some idea of what is needed, they will do a better job. Eisner goes on to say, when in doubt discuss strategy and tactics beforehand.

" Fires in single-family dwellings are the most common structural fire scenario firefighters will face. In order for these operations to be handled in a well-coordinated manner, the fire department must have a set plan of action for responding to dwelling fires. This plan or written policy is known as the department's standard operating procedure (SOP), and the SOP is usually initiated by the first fire companies reaching the scene" (Wieder, 1993, p 60).

" SOPs should be established to follow the most commonly accepted order of fireground priorities: rescue, fire control, and property conservation" (Wieder, 1993, p 60).

Weider (1993) also states, the use of SOPs reduces confusion and increases efficiency on the fire-ground.

" While some jurisdictions may face special or unusual fire problems particular to their areas, one type of incident we all share is the residential structure fire. It is easily the most-common type of structure fire, and is responsible for the majority of civilian fire deaths and injuries" (Haberski, 1996, p 6).

" The systematic deployment of strategy should be considered a tool and utilized along with knowledge, experience, and training" (Smith, 1992, p 20).

The research problem also indicated that the guideline needed to outline the specific equipment to be used at single family dwelling fires. While the Olathe Fire Department does use hose and SCBA's on all structure fires, it is this researchers opinion that when combating a fire in a single family dwelling the utilization of thermal imaging and forcible entry tools (flat head ax and halligan type bar) should be mandatory. The following findings emphasized to this researcher that this opinion was correct.

" Thermal imaging holds more promise for improved fire protection services than anything other than mandatory fire sprinklers and monitored notification systems. The ability to see through smoke and darkness and spot heat through a wall will greatly change the way we conduct our business on the scene" (Stevens, 1998, p 68).

" We are confident that thermal imaging is indeed progressing from the 'nice to have' category and will become an essential part of the fire service front line equipment in the coming years " (Lyons, 1995, p 7).

" Infrared imaging's time finally may have come for the fire service" (Woodworth, 1995, p 81).

Woodworth (1995) states, that the Atlanta Fire Department used the CairnsIRIS at numerous fires, primarily for search and rescue. Crews using the device were able to search areas in about half the time required when using conventional search techniques.

Siuru (1996) says, that infrared imaging will have as much impact on fire fighting and rescues as the switch from the bucket brigade to the fire hose.

" In one rescue exercise, a system equipped Capt. Rusinski competed against two firefighters who didn't have the system. The objective was to "rescue" a dummy in a smoke filled building. Even after giving the unequipped rescuers a five minute head start, Rusinski was able to find the dummy and drag it out while his fellow rescuers were still finding their way around the first floor " (Siuru, 1996, p 62).

Siuru (1996) states, that tests have shown that the use of the Cairns infrared system may reduce rescue times by as much as 50 percent.

" The Cairns IRIS spots people easily, and can even see fires inside walls and floors. The black and white image is a little blurry, and the steep price tag - $25,000 per headset- make it hard for most fire departments to stock up. But these devices could help save fire victims and firefighters lives" (Unknown, 1995, p 12).

Fritz (1998) states, that a well trained firefighter armed with a set of irons (flat head ax and halligan type bar) would be unstoppable at almost any task given him.

" Put a firefighter in a round room that has no doors or windows. He can't reach the ceiling, and the floor is rock solid. The task is for the firefighter to escape from the room. If we were to come back in about three hours, we would find the firefighter still in the room. But, give the firefighter a set of irons and in no time he would have the place

dismantled and probably be halfway through building a barbecue with the rubble" (Fritz, 1998, p 93).

The literature review demonstrates that others have found merit in utilizing a set of specific responsibilities and equipment when combating fires in single family dwellings.

As this researcher evaluated the findings of the literature review, it became clear that this project could have a big impact on the Olathe Fire Department. The research demonstrated that specific responsibilities and equipment to be used at single family dwelling fires would increase the safety of the firefighters and occupants. The research demonstrated that specific responsibilities and equipment would increase the efficiency of the primary search. Lastly, the research has shown that specific responsibilities and equipment would reduce the time necessary to find and control the fire.

Procedures

The first procedure was to conduct a literature review of the available materials at both the public library of Olathe, Kansas and the NFA's Learning Resource Center.

The second procedure was to design a standard operating guideline that addressed procedures and equipment to be used while combating single family dwelling fires (Appendix A). This guideline in conjunction with a newly developed tactical work sheet (Appendix B) was evaluated in several field test studies. The first field test study was conducted on July 11, 1998. Seven fires were started in an abandoned donated house using discarded wood and hay. Fire crews were sent into the burning structure to evaluate the differences between finding and controlling the fire utilizing the thermal imaging camera and finding and controlling the fire without the thermal imaging camera. This field test was specific to questions 1 and 3 from the introduction section of this paper. The quicker and easier the fire was found and controlled should also mean the less time the firefighters were in the structure.

Twelve total field tests were conducted over a six-day period on 7-27-98, 7-28-98, 7-29-98, 8-5-98, 8-6-98, and 8-7-98. These field tests were conducted at the Overland Park Fire Training Center in a controlled fire room. Flammable gas was burned from a controlled prop. Excelsior was burned in a 55 gallon container to simulate real smoke. Each fire crew, working with three other crews, was assigned to complete two drills. On the first drill, the crews were dispatched to a fire in a simulated single family dwelling. This information that they were given was limited to the initial dispatch information. The dispatch stated that a fire was burning at a single-family structure, the occupants may still be inside the structure, and that several calls have been received for this address. Once

the participants found and controlled the fire, conducted a primary search to find and remove the victim, provided ventilation, and performed a secondary search, the time on the stopwatch was concluded.

After a short briefing and clean up of equipment, each crew was then given 30 minutes to read and discuss the new standard operating guideline and tactical work sheet created by this researcher. For the second drill, the incident commander was given the new standard operating guideline and the tactical work sheet to use and the search team was given the one thermal imaging camera. These same crews, responding in a different order, were then asked to perform basically the same drill as they performed earlier; however without telling the crews, the fire was located in a different area of the room and the victim was placed in a different area of the room. For each drill a training division member was dressed in full protective equipment and used to simulate the victim. The purpose of using a live person instead of a dummy was that the dummy would not be able to give off heat. The thermal imaging camera would not be able to see the dummy.

The purpose of this second drill was to answer questions 1 and 2 found in the introduction section. The differences in times were used to determine whether the victim was found quicker and easier with the use of the new standard operating guideline and thermal imaging camera. These drills also were used to help determine if the safety of the firefighters and occupants was increased. The quicker that the occupant/victim was found and extricated would also mean that the firefighters and occupants were exposed to the elements for shorter periods of times.

The one limitation of these field tests was that this researcher was unable to evaluate the use of the irons (flat head ax and halligan type bar). The structures that were available did not lend themselves to using these tools.

The assumption of this researcher is that a guideline that outlines specific responsibilities and equipment to be used at single family dwellings would increase the safety of both firefighters and occupants, would increase the efficiency of a primary search, and would reduce the time necessary to find and control the fire.

Results

All results are derived from the thirteen drills and the feedback sessions conducted after each drill.

Question 1. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the safety of the firefighters and occupants involved in the incident?

After each day of drills, this researcher asked the group of participants the above question specific to the guideline developed by this researcher. During the drills and feedback sessions the participants stated the following:

1. "This system that we practiced today reduces confusion, safety was enhanced "
2. "During the first drill, without the guideline, there was a lot of congestion on the first floor. I felt safer during the second drill''
3. "The guideline takes out the guesswork that comes with fighting structure fires"
4. "We are on the right track with this type of system, this is much safer"
5. "The second drill worked fine but we can't always go by the policy all the time"
6. "This is a no brainer. Personnel safety was increased, the camera and irons are a great idea"
7. "Sometimes we may have to deviate from the policy but the camera helped and added to the overall safety"
8. "I am not in favor of having crew assignments prior to arrival"
9. "These drills are great, I would rather do this type of thing than sit in the air conditioned fire station"
10. "The second time that you do a drill it will always be better"

11. “This is a more systematic approach, of course the firefighters and occupants are going to be safer”
12. “By simply having the additional equipment the firefighters will be safer”
13. “This is something that we should do more of, this hits on the basics”
14. “This system lets the incident commander know what is happening and the accountability of each crew”

Question 2. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires increase the efficiency of the primary search?

This question was asked following each day of drills conducted at the Overland Park Training Center. Again, specific reference was made to the guideline developed by this researcher. After all the times were compared, the victim was found an average of two minutes, twenty eight seconds faster when using the new S.O.P. and the required equipment.

The participants stated the following:

1. “The camera helped with the search process. We were able to search much quicker with the use of the thermal imaging camera”
2. “My crew was going to go to the left as we searched the structure. It was a good thing that we had the camera or we would still be searching”
3. “Trying to hold the camera, the irons, and stretch the hose was not easy. We need to get rid of one item or have more people assigned for the job”
4. “We should use the cameras when we conduct any search, I felt much safer and able to do the job quicker”

5. "Having a system that puts search in its proper area of importance is nice, we often do other less important functions before we search"
6. "I could really see the outline of the person when conducting the search"
7. "This is a very proactive approach"
8. "If my son or daughter was in need of rescue, I would want a system that emphasized search"
9. "Our search time on the second drill was much faster"
10. "When the victim is close to the fire, the camera does not pick up the person. The heat from the fire drowns out the image of the person"

Question 3. Would a guideline that outlines specific responsibilities and equipment to be used at single family dwelling fires reduce the time necessary to find and control the fire? This question was asked to the participants in reference to the guideline developed by this researcher. Actual time that it took for each of the crews to find the fire was difficult to determine. Radio traffic and varying pre-entry procedures made these times difficult to validate; however, below is the feedback given to this researcher from the participants.

1. "Prior to making entry, we could see with the camera that the fire was located on the second floor. It reduced the time because we knew where to start the attack"
2. "As we went down the hall, the fire area was brighter when looking in the camera"
3. "The first arriving unit needs to contain and control the fire"
4. "This guideline makes it clear that fire attack needs to be done right away"
5. "I could actually see where the fire was located"

6. “When we made the attack, I could not see through the camera very well. All of the products of combustion seemed to cover the viewing area”
7. “The confusion of who was going to do what was gone. The crews knew what they needed to do. This only makes sense that the fire would go out quicker”
8. “With this system all three shifts would do it the same”
9. “Once we saw the fire we were able to put it out”

Discussion

The information found from the literature review was in direct correlation to the information discovered while conducting the drills. This researcher was taken by surprise at the similarities. For instance: both sources indicated that having a system (S.O.P) prior to arrival on the fire scene, reduces confusion, takes out the guesswork, and greatly adds to the overall safety of the firefighters and occupants. The need and desire for a standard operating procedure for single family dwelling fires became apparent.

A relationship was also found in that both sources were completely in favor of the noted equipment (thermal imaging camera and the set of irons). The literature review discussed how the thermal imaging camera was no longer a piece of equipment that was simply nice to have, but one that will become an essential item for the fire service. It stated how the camera can cut search times, and its ability to locate fires through smoke and darkness. The results of the times and feedback sessions echoed this same opinion. The participants felt much safer with the device and stated that their search times, ability to locate the fire, and general safety was enhanced when able to use this equipment.

There were no actual tests conducted using the set of irons; however, the feedback from the participants was favorable. The literature review stressed the benefits of this equipment and the participants had basically the same opinion. The ability to adequately carry these tools, along with the other equipment included in the guideline, was the main concern noted during the feedback sessions.

This researcher was extremely excited to hear and see the results of this study. One of the original premises of this applied research project was that the tactics, strategies, and equipment used at single family dwelling fires would vary depending on the individuals

on-duty when the alarm is received. This premise proved to be very accurate as the drills progressed. On each of the first set of drills, prior to training on the new S.O.P., the duties of the second, third, and fourth arriving units varied from drill to drill.

In terms of the feedback sessions, this researcher had the feeling everything was going too smoothly. The participants were eager for training and direction in this particular area. Generally the feedback was very positive with a few exceptions. It is this researcher's opinion that the participants would welcome this new S.O.P. with little opposition.

The implications of this study are that if we do not adopt this system or one similar, the members will most likely be upset. We have spent a considerable amount of time testing and providing feedback on this S.O.P., and the members have expressed their general acceptance and approval of this guideline. Secondly, the results indicate that the safety factor is increased for both firefighters and occupants, primary searches are done quicker and more efficiently, and lastly that the system works.

Recommendations

This researcher recommends the following:

1. Based on the information stated in the feedback sessions, this researcher recommends that the Olathe Fire Department adopt a standard operating guideline that addresses procedures and equipment to be used while combating fires in single family dwellings. This S.O.P. should be very similar to the one developed by this researcher.
2. Consider holding a training session for members of the Olathe City Council. The costs involved in purchasing thermal imaging cameras for each first line apparatus will be fairly high. At this training session, the fire department could involve the members of the City Council in single family structure fire exercises. The Council members will be given the opportunity to conduct a fire attack, perform a primary search, and participate in the role of the simulated victim. During these drills, they will have the opportunity to evaluate the differences between using the camera and not using the camera and the benefits that it provides to the firefighters and the occupants. In addition, the Council members would have first hand knowledge of how much more difficult it is for the firefighters to find them when they do not have a camera to utilize. Having a first-hand feeling of the advantages when using the camera should be of more benefit than any presentation that we could make.

3. After the funding sources have been established, form a committee to evaluate the different thermal imaging cameras available on the market. This committee would make recommendations to the Chief as to which cameras would work best for the Olathe Fire Department.
4. Perform quarterly drills for the purpose of evaluating the S.O.P. and the required equipment. These drills would continue to give the members of the Olathe Fire Department the opportunity to provide feedback on the system and any changes that should be considered.
5. Lobby for crews that consist of four members. During the feedback sessions several of the members stated that it was difficult to effectively utilize all of the equipment required in the S.O.P. with crews of only three personnel.
6. Consider writing S.O.P' s specific to other types of emergencies that the fire department may respond. This system worked very well with the testing and feedback sessions. The participants felt that they were a part of the process and had the opportunity to add their input. If this particular S.O.P. is adopted, it will most likely be well received due to the fact that it had representation from almost all Olathe Fire Department members.

Reference List

Eisner, Harvey. (1992, November). Fireground Tactics, When In Doubt. Firehouse , pp 14-17

Eisner, Harvey. (1993, January). Fireground Tactics, Being Prepared Before the Fire. Firehouse , pp 14-16

Fritz, Richard. (1998, May). The Irons. Fire Engineering , pp 93-96

Haberski, Michael. (1996, September). Modified Frontal Attack for the Attached Residential Garage. American Fire Journal , pp 6-11

Loeb, Donald. (1992, May). Fighting Fire in the 1 ½story frame dwelling. Fire Chief Magazine , pp 30-35

Lyons, John. (1995, September). Thermal Imaging – A Changing Approach. Fire Engineers Journal , pp 7-8

Siuru, William. (1996, March). Piercing the smoke. Emergency , pp 61-65

Smith, James. (1992, October). Developing Strategy and Tactics. Firehouse , pp 18-20

Stevens, Larry. (1998, May). Image Is Everything. Fire-Rescue Magazine , pp 68-79

Unknown Author, (1995, March). Lifesaver. Newsweek , pp 12

Wieder, Michael. (1993, March). SOPS For Single Family Dwelling Fires. Firefighters News , pp 60-63

Woodworth, Steven. (1995, June). Infrared Imaging For The Fire Service. Firehouse , pp 81-82

Appendix – A
Standard Operating Guideline

OLATHE FIRE DEPARTMENT
Administrative Policy Guide

Date: July 9, 1998	Policy No.:	Page 1 of 2
Subject: Control of Single Family Structure Fires.		
Summary: Establish an APG to assign order, provide a system and determine guidelines to combat single family structure fires.	Approved: Fire Chief	

. SCOPE / PURPOSE

The purpose of this APG is to standardize the way that the Olathe Fire Department combats single family structure fires.

Under no circumstance should this APG eliminate good judgement, common sense, and the discretion of personnel within the Olathe Fire Department.

II. ROLE / RESPONSIBILITY

At least four members shall be assembled before interior fire suppression operations can begin. If, upon arrival at the emergency scene, initial attack personnel find an imminent life threatening situation where immediate action could prevent the loss of life or serious injury, such action shall be permitted with less than four personnel on scene. A written investigation must be completed by the Fire Chief or his/her designee regarding the commitment of resources prior to having four personnel on scene.

The first arriving company should be prepared to perform the following duties.

Take command and provide an on scene report, if not already done by the IC
If possible and necessary, quickly ventilate near the source of the fire. This will provide an exit point for heated gases and smoke. This greatly adds to the safety of the firefighters making entry and attacking the fire. A set of irons (flat head ax and halligan) should accompany this crew if manpower allows.
If making an interior attack, the crews should search as they go. Utilize the thermal imaging device for a quick primary search while locating the fire.
Attack the fire using the correct line.
If not in the command position, this company will be known by their function and location. For instance: First Floor Fire Attack or Second Floor Fire Attack.

The second arriving company should be prepared to perform the following duties.

Primary Search of the structure. The areas to be searched will be determined by command. This company must bring a thermal imaging device, protection line, and a set of irons as they enter the structure. This search needs to be coordinated with the incident commander and the attack crew.
This crew should take advantage of the "ventilate as you go" method if necessary. Opening windows and or other methods of ventilation should be considered.
After the initial assignment, this crew should be assigned to search other floors in the

structure. All clears must be stated once the assignment is completed.

. **This company will be known by their function and location. For instance: Second Floor Search or Basement Search.**

The third arriving company should be prepared to perform the following duties.

. Act as the Rapid Intervention Team. At least two members from the third in company must be in full protective clothing with thermal imaging and all equipment as outlined in the RIT training manual. The location of the RIT will be determined by the incident commander. If the company is split by the IC then the other two members will act as aides to the incident commander in areas such as safety, positive pressure at the door, accountability, planning etc.

. **The members in RIT mode will be known as RIT and the others in the company will be known by their function**.

The fourth in company should be prepared to perform the following duties.

This company may be assigned one or more tasks. For instance: exposures, back-up, utilities, ventilation, and secondary search, etc. **These members will be known by their function.**

It is important that a secondary search be initiated as soon as possible.

NOTE: All apparatus using an aerial device should be positioned to take full advantage of the aerial ladder. If necessary and practical, the apparatus shall be backed into position so the turntable can be as close to the structure as safely possible. When there is a recognized need for the 95 foot quint, position or call for it as soon as practical.

Appendix B
Tactical Work Sheet

SINGLE FAMILY DWELLING FIRES

Incident Commander _____

Safety _____

PIO _____

Location _____

	P.Search	Attack	Vent.	RIT	Back-Up	Utilities	Med.	Exposures	S.Search
Basement									
Floor I									
Floor 2									
Roof									
Exterior									
Interior									

Units Dispatched

Staged Units Location

Sketch